

*Reducing  
health risks  
associated  
with drinking  
water*

# Private Well Water Inspections

Why they are so important!



# When buying or selling a home with a well, there are three critical questions:

- 1 Does the quality of water meet EPA, state and local requirements for clean drinking water?
- 2 Does this well produce enough water for the buyer and their family?
- 3 What are the health risks associated with the well design, infrastructure, or water quality?

Water impacts your buyer's health, safety and quality of life more than any other element in a home. It is essential that the water is healthy and safe to consume and of sufficient quantity to meet a family's daily household needs.

The only way to be sure the water poses no health risks and that the well will provide enough water is to have it thoroughly inspected, tested and analyzed by a water quality professional.

In fact, many mortgage lending institutions and local boards of health require a well inspection and water quality tests before the real estate transaction can be completed.



# Test your knowledge of private water wells!

- 1. True or False:** Ground water chemistry rarely changes.
- 2. True or False:** If a neighbor's well tested fine, then this well is also ok.
- 3. True or False:** If water is colorless, odorless and tasteless, it is safe to drink.
- 4. True or False:** There has never been a quantity problem with this well, therefore the well can support the home's requirements.
- 5. True or False:** Running water into a bucket for an hour is a good indicator of the well's performance.
- 6. True or False:** If the level of radon in water is over 10,000 pCi/L, a radon in water treatment system is required.
- 7. How much water does the average individual use per day?**
  - a) 25 gallons
  - b) 75 gallons
  - c) 110 gallons
- 8. The average person uses water in their home:**
  - a) 15 times a day
  - b) 25 times a day
  - c) 33 times a day
- 9. What element of a home has the single biggest risk to a person's health?**
  - a) Heating system
  - b) Electrical system
  - c) Drinking water
- 10. How often should a private water well be tested?**
  - a) Quarterly
  - b) Annually
  - c) Every three years

See page 11 for the answers.



# Why test?

- **Healthy, safe water is essential.**

Consider this: Our bodies are made up of 70% water and we consume 50 to 100 ounces of water per day. Contaminants in our drinking water can be odorless, colorless and tasteless, so the only way to know the water is truly safe and healthy is through comprehensive testing and analysis.

- **Water quantity must meet the household's needs.**

Between brushing our teeth, showering, flushing, washing clothes and dishes, cooking, and enjoying a glass of cool ice water on a hot day, we each use an average of 110 gallons of water per day. It's critical that a home's private well system be able to meet the usage requirements of the homeowner and family.

- **Private well owners are responsible for their well.**

Ground water changes over time, and equipment can deteriorate. As with the home's physical structure, it's critical that owners know the overall condition of the system and water quality – and how to maintain it.

- **Issues can be resolved before the sale.**

There's nothing worse than having to tell a new home buyer that they need thousands of dollars on a treatment system *after* they purchase a home. A pre-sale inspection, well performance test and water quality analysis will identify any problems that should be addressed before completing the sale.

- **Testing removes liability from the real estate agent.**

You'll have peace of mind that there won't be any "surprises."

- **Testing gives your client peace of mind.**

Knowing that the water is healthy and safe means one less thing to worry about.

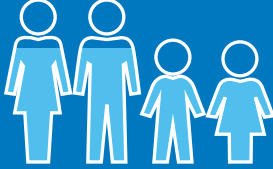
- **Your buyer becomes educated.**

A water quality specialist can teach buyers how to maintain the health and safety of their drinking water.

- **Healthy water maximizes the overall value of a home!**

## Water usage by the numbers:

**70**



The percentage of water that makes up your body.

**33**



The number of times you use water each day.

**110**



The number of gallons used per person per day.

**50–100**



Number of ounces of water each person drinks per day.

# Private water systems are complex!

## Conducting a thorough inspection of a private well water system is a complex process.

Everything from the well location and surroundings to the well cap, casing and piping all need to be checked. Inside the home, there's the pressure tank and the tank tee and gauge, which are often on their last leg because of low pH water.

Many homes also have treatment systems, each one custom designed for the well and specific groundwater characteristics. Being able to explain to the buyer each type of treatment system and its operation is an important part of the inspection.

### ► Groundwater changes over time.

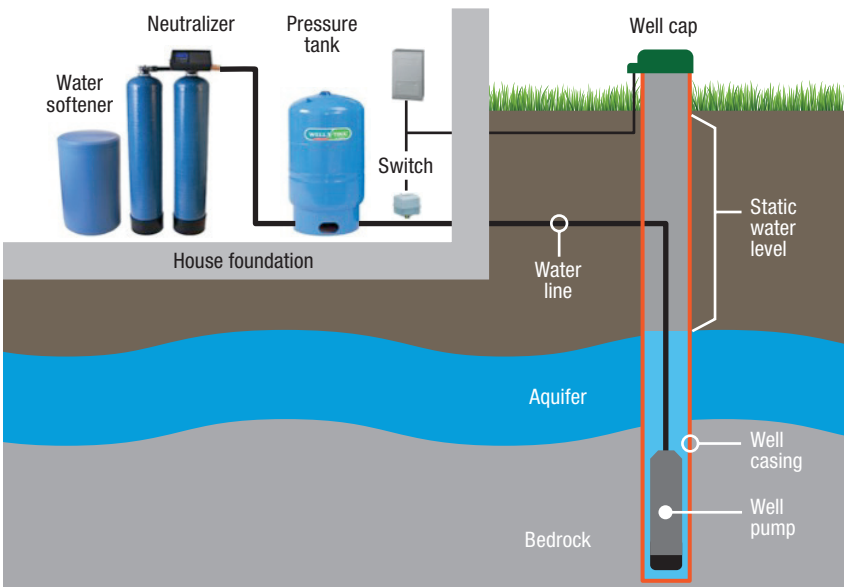
In fact, the chemistry of groundwater is constantly changing due to seasonality, droughts and flooding. Anything that changes the groundwater level or local geology impacts the water chemistry inside the well water column. These changes impact the quality, safety and health of the water, which is why well and water systems should be checked at least annually.

### Analysis of lab test results is the most important step.

Comprehensive analysis requires an understanding the health risks and home impacts of certain contaminants, their interactions, developing water quality scores, and ultimately establishing a water monitoring schedule is critical to ensuring safe, healthy water for your buyers and their families.

### ► Just because a neighbor's water tested safe doesn't mean yours is.

With so many components and the changing nature of ground water, the water from neighboring wells can yield very different results.



# Simplifying the process. Saving you time.

From understanding Board of Health requirements and EPA regulations, to on-site inspections, delivering samples to a state-certified lab and analysis of test results, inspecting private well systems is a time-consuming and complex responsibility.

Water quality specialists save you time by taking care of all your client's water-testing needs. They have the knowledge, experience, and expertise to ensure well water issues don't derail the deal.

Many home inspectors are choosing to partner with SafeWell. SafeWell has the expertise and can save a home inspector time and money while providing the buyer peace of mind that they'll have adequate supply of clean healthy water. Plus, after the home sale, SafeWell is still there to help the buyer with all their potential drinking water related issues.



# Here's how the process works...

## 1 Well inspection and performance test

A thorough well inspection begins with research. A SafeWell water quality specialist will look up well construction reports to determine the age and depth of the well and check local Board of Health guidelines. Then we inspect the system from A to Z and calculate the well's available water supply.

Your water quality specialist will then inspect the condition of the well head (casing, well cap and electrical conduit) and the area around the well and run a performance test.

### ▶ **Running water into a bucket does not characterize a well's performance.**

It's important to determine whether the well can support the water use requirements of the home. A combination of both the recovery rate and storage volume make up the available water supply and need to be accurately measured and calculated accordingly. A water quality specialist can do this in as little as one hour through non-invasive sonar monitoring.

### **Water quality specialists use real-time well monitoring to determine:**

- Sustained flow rate
- 2 hour peak yield

### **Well inspection check list:**

- Document well type
- Inspect well cap
- Open cap
- Inspect casing (inside and out)
- Check connections
- Measure static water level
- Educate customer on how their well works

*Expert advice can smooth the transaction*





## 2 Water delivery and treatment system inspection

Low pH can cause corrosion, pressure tanks can leak, gauges can malfunction, pump and whole-house shut-offs can get stuck or fail altogether... It's important that equipment be functioning properly.

For homes with water treatment systems, the type of system should be documented, along with part numbers for replacement filters.

Your water quality specialist will educate your customer on the location of equipment, how to shut off the water, and how to maintain the treatment system.

In addition, your water quality specialist can work with your client to develop a maintenance schedule to include annual inspections, treatment maintenance and a custom water quality testing schedule which is critical to keeping the drinking water in the home as healthy as possible.

### Delivery & treatment system check list:

- Check pressure tank
- Check pressure gauge
- Check well pump shut-off
- Check whole house shut-off
- Document treatment system type:
  - i. Ion exchange
  - ii. Oxidizer
  - iii. Neutralizer
  - iv. Carbon system
  - v. Reverse osmosis
- Review and document treatment system settings and backwash schedule
- Provide part numbers for replacement filters
- Educate customer about treatment system
- Provide maintenance schedule



### 3 Water quality testing

► **Contaminated water can look, smell and taste fine.**

It is critical to analyze the drinking water quality to identify and address potential health risks or aesthetic issues before closing.

Your water quality specialist should inspect the entire well system as part of the process, and develop a collection plan based on the treatment system. Sometimes raw and treated testing may be necessary to determine the overall performance of the treatment system and whether it is working properly. All samples should be collected and delivered to a state certified lab by an independent third party.

**A baseline analysis should cover, at a minimum:**

- Bacteria
- Nitrates and nitrites
- Inorganics (including arsenic, lead, copper, iron, manganese, etc.) and any of local concern
- Physical characteristics (including color, odor, pH, hardness, conductivity, TDS)
- Radon in water
- Volatile Organic Compound testing for a long list of man-made chemicals (including MTBE, Toluene, Benzene, Chloroform)



#### **Radon:** ***From water to air?***

86 Educating clients about radon is vital because a real estate transaction is usually the only time a home is analyzed for radon.

Radon is a naturally-occurring element that enters the home's air through cracks in the foundation. It is associated with 21,000 deaths per year in the U.S. The greatest health risk of radon is from breathing it.

However, radon can also be found in well water. *While water-borne radon is not in itself a major concern, it can be aerated from the shower, dishwasher, kitchen sink, etc., adding to the radon that's accumulated in the air.*

(22) When radon in water exceeds 10,000 pCi/L, additional testing must be done. If the radon in the water is significantly contributing to the level of radon in the air, a radon-in-water treatment system may be necessary.

## 4 Water quality analysis

Not everyone is a water quality specialist, nor is it necessary to become one for the purposes of purchasing a home with a well. A professional interpretation of the laboratory results is important to ensure an understanding of individual contaminants in the water, their risks and interactions, and best options for managing or mitigating them.

Home inspectors are great at identifying critical issues with the home, but when it comes to fully analyzing the overall drinking water quality and the impact of specific contaminants on buyer's health, they are not experts in this area. The real work for water quality analysis starts when the results are received back from the lab.

**Analysis is the MOST important step.**

### Water analysis check list:

- Review water chemistry and physical characteristics
- Calculate the water quality rating based on health risk and home impacts
- Develop quality monitoring schedule
- Develop "Next Steps" list
- Create Water Quality Report

## SafeWell Private Well Water Quiz Answers

- 1. False.** Groundwater chemistry is constantly changing due to variations in groundwater levels.
- 2. False.** Wells have extremely localized water chemistry and are influenced by the actual spot drilled into the bedrock.
- 3. False.** Many primary contaminants/pollutants are colorless and odorless and tasteless, take arsenic for example.
- 4. False.** One family's water consumption is not the same as another's consumption. A well needs to support the number of bedrooms a home has plus additional if irrigation is planned or used.
- 5. False.** A well needs to be properly profiled and meet minimum and optimum requirements for quantity. A well should be fully profiled by measuring the drop in the well and knowing the overall storage capacity of the well. This will determine the availability of water over a given period of time.
- 6. False.** A radon level over 10,000 pCi/L should trigger additional testing; it does not mean that a *radon in water* system should be installed.
- 7. C.** The average person uses 110 gallons per day of water.
- 8. C.** The average person uses water 33 times in any given day
- 9. C.** The single biggest risk to a person's health in their home is their drinking water
- 10.** This is a trick question, depending on issues identified in baseline water testing will determine if water should be tested quarterly or annually.



## Why SafeWell?

**At SafeWell we passionately believe in improving quality of life through healthy drinking water.**

Our company grew out of the realization that residential well owners don't typically think much about the quality of their drinking water until it looks or smells bad, or when they are thinking of selling their home. And when we buy a home with a private well, no one tells us what we should be doing to make sure the well is functioning properly.

SafeWell is the industry leader in standardizing all aspects of residential well ownership. We've developed a proprietary Residential Water Score (RWS) system to clearly convey the impact of your water's quality on your family's health and your home, and we are the first to offer monitoring services based on EPA standards.

From quality and quantity testing through treatment options and monitoring services we passionately work with our partners and customers to deliver the healthiest, highest quality drinking water from your private well.



Our Promise: Not just safe water. Healthy water.  
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